

A NEW NIGHT SNAKE FROM MEXICO (SERPENTES: COLUBRIDAE)

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ABSTRACT: A new species of *Hypsiglena* is described from eastern Querétaro, Mexico. Taken from the arid tropical scrub forest of the Jalpan Valley, the new species is distinguished from other *Hypsiglena* by having a longer tail and broader dorsal bands. The new species is morphologically distinct from the nearest population of *H. torquata jani*.

During the past 110 years, or since the original description of *Hypsiglena torquata* (Gunther), 1860 and *H. ochrorhyncha* Cope, 1860, the status of the two taxa has been a subject of much debate.

Cope (1860) proposed the genus *Hypsiglena* (type species: *ochrorhyncha*) from specimens collected at Cape San Lucas, Baja California. Ten months earlier, Gunther (1860) described a snake (*torquata*) from Nicaragua that he assigned to the genus *Leptodeira*. Later Gunther (1895) reassigned *torquata* to *Hypsiglena* and included *ochrorhyncha* as a synonym. He recognized the fact that two nape patterns existed: *torquata* with a cream-colored nuchal band followed by a single dark nuchal band, and *ochrorhyncha* which lacked the light band but possessed a dark nuchal band or spots.

Dunn (1936) placed the genus *Hypsiglena* in the synonymy of *Leptodeira*, asserting that the presence or absence of grooves in the posterior maxillary teeth was of no significant value. Taylor (1938) suggested retaining *Hypsiglena* and presented a redefinition of *Hypsiglena*. Tanner's (1944) systematic review of the genus *Hypsiglena* supported Taylor's views.

Three additional taxa of importance to this problem were named subsequent to Cope's description of the genus. Dugès (1866) described *Liophis jani* from Guanajuato, Mexico; Stejneger (1893) described *Hypsiglena texana* from near Laredo, Texas; and Taylor (1938) named a new race, *H. torquata dunklei*, from near Forlón, Tamaulipas, Mexico.

Boulenger (1894) placed *H. texana* Stejneger in the synonymy of *H. ochrorhyncha* Cope. Cope (1900) agreed with this, as did Taylor (1938). No mention was made by Boulenger or Cope of the status of *Liophis jani*. Even though *texana* was considered a race of *ochrorhyncha* by Stejneger and Barbour (1917), it was not generally recognized until Tanner's (1944) systematic review of the genus was published.

Taylor (1938) placed the species *Liophis jani* in the synonymy of *torquata*. However, Smith (1943) resurrected *jani* and gave it subspecific status

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with *H. ochrorhyncha*. This arrangement was followed by Tanner (1944) and Smith and Taylor (1945). Dixon (1965) reviewed the status of *jani*, *texana*, and *ochrorhyncha*, and proposed relegating *H. o. texana* to synonymy of *H. o. jani*. Taylor's (1938) race, *Hypsiglena t. dunklei*, was elevated to a specific level by Tanner (1944). Dixon (1962) utilizing additional specimens, returned *dunklei* to a race of *torquata* based on the similarity of nuchal patterns.

Though *H. torquata* and *H. ochrorhyncha* were considered distinct species by earlier authors, Dunn (1936) suggested they were conspecific. Taylor (1938) and Tanner (1944) considered the possibility of combining the two forms, but favored retaining the two as separate species. Bogert and Oliver (1945) favored the arrangement of Dunn, based on similarities of squamation and habitat of snakes with both nuchal types from southern Sonora, Mexico. As a result, the races of *ochrorhyncha* (*texana*, *jani*) became races of *torquata*. This arrangement was maintained for the next 20 years until Dixon (1965) proposed the separation of *ochrorhyncha* from *torquata* at the specific level, based on the presence or absence of a light cream colored nuchal collar. Tanner (1966) and Hardy and McDiarmid (1969) suggested returning to Dunn's 1936 classification.

An attempt was made to solve the species problem by Mr. Ernest Tanzer, through the use of karyotyping, examination of all preserved material, and examination of hatchlings from clutches of eggs from areas of overlap between the two forms. Unfortunately, before the completion of his monograph of the genus, Ernest Tanzer died in January, 1971.

For the past three years we (Dixon, Ketchersid and Lieb) have undertaken a study of the herpetofauna of the Mexican state of Querétaro and recently discovered what we consider a new species of *Hypsiglena* in the isolated valley of the Rio Jalpan. In memory of Ernest Tanzer, a close friend and ardent field companion, we propose the new species be known as

Hypsiglena tanzeri, new species

Figure 1A, B

Holotype.—Texas Cooperative Wildlife Collection 34079, male, taken 5 km E. Jalpan, Querétaro, Mexico, 762 m, 99° 27' W. 21° 13' N., by Frank Guyer, 13 April 1971.

Paratype.—Los Angeles County Museum of Natural History (72068) male, taken 0.8 km W. Landa de Matamoros, 1067 m; Querétaro, Mexico, by Carl Lieb and Douglas Albaugh, 20 May 1971.

Diagnosis.—*Hypsiglena tanzeri* is readily distinguished from populations of snakes that have been referred to *H. ochrorhyncha* by possessing a broad nuchal collar. It most closely resembles *H. torquata* from which it is readily distinguished by the presence of wider (usually reaching the second dorsal scale row) and longer (usually 3 to 4 scales long) brown to black bands on the anterior two-thirds of the body. *H. torquata* has dorsal blotches reaching

the sixth or seventh scale row and 2 to 3 scales long. Additionally *H. tanzeri* has the following characters: tail length, 22.5 per cent of the total length; postocular stripe not continuous with nape blotch, and 7 supralabials; whereas, *H. torquata* has a tail length 19.5 per cent or less of the total length; a postocular stripe that may or may not join the nuchal blotch; usually (99 per cent of specimens examined) 8 or more supralabials.

Description of the Holotype.—Head and body proportions normal for *Hypsiglena*; total length 328 mm, tail 73 mm, ratio of tail to total length .225; dorsal scale formula 21-21-17; 2 pair of chin shields of about equal length; ventrals 175; caudals 69, including tip; supralabials 7-7; infralabials 10-10, preoculars 2-2, postoculars 2-2, loreal single; temporals 1+2+3; third and fourth supralabials entering eye; fifth and sixth supralabials and sixth infralabials largest of series; first five infralabials contact first pair chin shields, primary temporal contacts parietal, both secondary temporals, fifth and sixth supralabials; maxillary teeth 9-9, followed by a distema and two large ungrooved teeth.

Color pattern consists of 37 black bands and spots on body; anterior 26 bands 16 to 17 scale rows wide, reducing the intercalary spots to narrow brownish black lines on scale rows one and two on most of the body; dorsal color pattern above the last 26 ventrals consists of three rows of spots, the outer rows alternating with the middle row; interspaces between major bands one to two scales in length, grayish white with dark pigment in the center of each scale; nape band ten scales in length, 15 scales if the median anterior projection of the nape band (Fig. 1A) is included in the count; dorsal surface of head heavily pigmented with brownish black spots on a ground color of dark gray; nasal-prefrontal area heavily pigmented, less so from frontal to posterior edge of parietal; postocular stripe reaching one scale row beyond last supralabial on left side, terminating on last supralabial on right side, not connected to nape blotch; two coalesced black spots on medial edge of center of parietals; labials dirty white with scattered marks of brownish black; mental and anterior two infralabials heavily pigmented with brownish black; center of each scale between parietals and anterior edge of nuchal blotch densely pigmented with brownish black; venter cream white.

Variation.—The single paratype (Fig. 1B) differs from the type in having the band color dark brown rather than black; 21 large anterior bands; posterior bands small, forming an alternating series of smaller spots above the last 58 ventrals. The paratype lacks an anterior median projection of the nuchal blotch. Otherwise, the general color pattern is similar to the type. Unfortunately, the paratype is missing about one-third of its tail, and tail/total length ratio could not be determined. The only scale difference between the paratype and the type is 178 ventrals in the former.

Remarks.—Data from 315 specimens of *Hypsiglena* were made available to us by Mrs. Glenda Tanzer and 200 additional specimens were examined

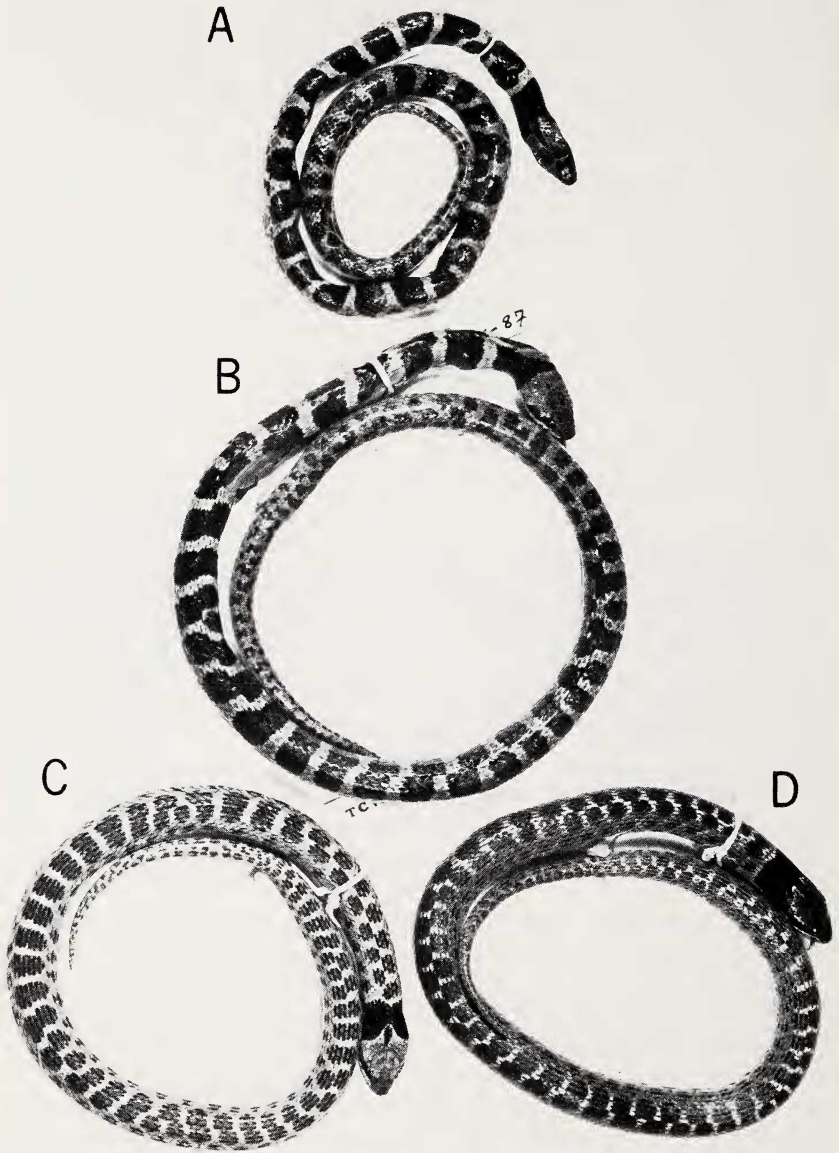
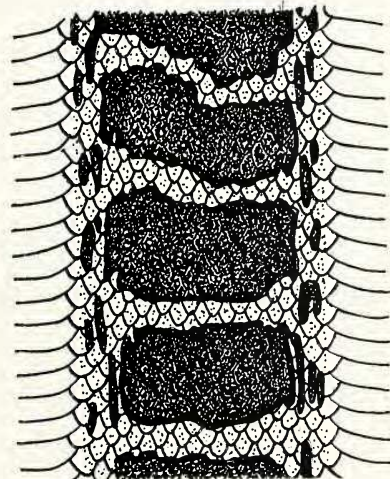
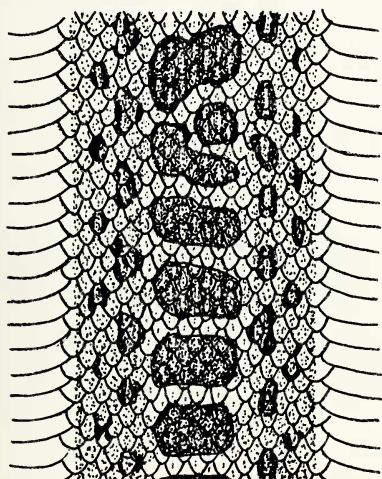


FIGURE 1. Dorsal view of the holotype (A) and paratype (B) of *Hypsiglena tanzeri*, and two male specimens (C and D) of *H. torquata* from Querétaro.

by Dixon. The 515 specimens represent at least three distinct geographic populations; (A) northern Sinaloa, Sonora, and Arizona; (B) the remainder of Sinaloa, Nayarit, Jalisco, Michoacan, Guerrero, and Morelos; (C) all of the Mexican Plateau, the lowlands of northeastern Mexico, Texas, New Mexico, Oklahoma, and Kansas. These will be discussed in greater detail elsewhere. Population "(C)" is of special interest since it is geographically closest to the locality of *H. tanzeri*. The general variation of the former population is as follows: Counts of ventrals plus caudals of 206 male specimens range from 200 to 232 ($x = 215.0$), in 177 females, 200 to 231 ($x = 214.4$); midbody scale rows of both sexes generally 21 (in 373 specimens), with 23 rows occurring three times, 20 (4), and 19 (5); scale rows just anterior to the vent are highly variable, with 19 occurring in one specimen; 18 in 4, 17 in 275, 16 in 76, and 15 in 27. Preoculars usually two with a 1-1 combination occurring in ten specimens, 1-2 in 8, 2-2 in 358, 2-3 in 5, 3-3 in 2; postoculars usually two, with 1-1 occurring in eight specimens, 1-2 in 11, 2-2 in 358, 2-3 in 5, and 3-3 in 1; supralabials usually eight, with 7-7 occurring in five specimens, 7-8 in 8, 8-8 in 359, and 8-9 in 11; infralabials usually ten, with 9-9 in 20 specimens, 9-10 in 31, 10-10 in 296, 10-11 in 20, 11-11 in 13, 11-12 in 2, and 12-12 in 1; loreals usually one, with 1-2 in 3 specimens, and 2-2 in 1. Body blotches vary from 41 to 72 ($x = 51.8$) in 186 females, and 36 to 69 ($x = 49.3$) in 215 males.

From the large series available, only 10 male specimens of *H. torquata*



TCWC 34082

TCWC 34079

FIGURE 2. Midbody color patterns of *H. torquata* (left) and *H. tanzeri* (right) from Querétaro, Mexico.

jani were found that represented the nearest geographic localities to the area where *H. tanzeri* has been taken. The comparative material is represented by one specimen from the Mexican state of Hidalgo, four from San Luis Potosí, two from Querétaro (Fig. 1, C and D), and three from Guanajuato. Their characteristics are: ventrals, 153-166 ($x=159.3$); caudals, 48-55 ($x=50.2$); ventrals + caudals, 201 to 219 ($x=210.4$); supralabials, 8 in eight specimens, 7 in two; infralabials, 9 in two, and 10 in eight; preoculars, 1 in two, 2 in eight; postoculars, 2 in all, third and fourth supralabials entering orbit in two, fourth and fifth in eight; tail length ranges from 15.8 to 18.8 ($x=17.5$) per cent of total length; body blotches vary from 39 to 53 ($x=44.9$); width of fifteenth dorsal blotch ranges from 7 to 8 scale rows wide; all specimens with two to three rows of intercalary spots.

Three specimens of *H. torquata jani* were taken 18 and 19 May, 1971, in the Rio Extoraz Valley in Querétaro, some 58 airline kilometers from the type locality of *H. tanzeri*. Their color pattern is typical of nearly all races of *H. torquata* and show no approach to the condition found in *H. tanzeri* (Fig. 2).

The differences presently used to separate the currently recognized races of *H. torquata* are comparatively small. Most are based on the number of ventrals and caudals, subtle differences in color pattern, and reduction in the number of midbody scale rows. When these "racial" criteria are considered with respect to the characters of *H. tanzeri* and adjacent populations of *H. torquata*, additional support is gained for recognition of *H. tanzeri* at the specific level.

Specimens of *H. torquata jani* have been taken from the desert in the states of Querétaro and San Luis Potosí, Guanajuato, and Hidalgo, from tropical deciduous forest in southern Tamaulipas and eastern San Luis Potosí, and from arid scrub in southern San Luis Potosí. Although none have yet come from the arid tropical scrub in the Jalpan Valley, they may someday be taken there.

The soils in the vicinity of the type locality consist of Karst Limestone on the slopes, with alluvial top soil on the valley floor. Dense thickets of cacti and non-thorny shrubs cover the limestone hillsides and cultivated crops are grown on the valley floor. The other nocturnal snakes which have been taken from the same general area are *Elaphe guttata*, *Lampropeltis triangulum*, *Leptoderia septentrionalis*, and *Trimorphodon tau*.

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RESUMEN

Se describe una nueva especie de *Hypsiglena* de la parte occidental de Querétaro, México. Colectada en la zona de mezquital (árido tropical) del valle de Jalpan. La nueva especie se distingue de las otras *Hypsiglena* por tener la cola más larga y bandas dorsales más anchas. La nueva especie es morfológicamente diferente de las poblaciones más cercanas de *H. torquata jani*.

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